

AMENDMENTS TO THE CLAIMS

Please accept the unaltered claims presented hereafter:

Claims:

1. (Original) A method for decomposing the polyester component of a commingled post-consumer or post-industrial waste into monomeric and oligomeric units constituting a portion of an ester solvent composition comprising: (a) admixing commingled waste with an initial ester solvent composition containing at least one cyclic ester; (b) heating the admixture to a temperature above about 215 degrees Celsius for a period of at least 3 minutes to form a second ester solvent composition; (c) cooling the second ester solvent composition to a temperature below about 70 degrees Celsius; and (d) separating the second ester solvent composition from solid impurities by sedimentation, flocculation, filtration, centrifugation, or combinations thereof.

2. (Original) The method of claim 1 wherein in step (a) the initial ester solvent composition comprises about 98% to about 30% by weight of the admixture.

3. (Original) The method of claim 1 wherein in step (a) the polyester materials physically separated from post-consumer or post-industrial waste are poly(ethylene terephthalate).

4. (Original) The method of claim 1 wherein in step (b) the admixture is heated to a temperature above about 230 degrees Celsius.

5. (Original) The method of claim 1 wherein in step (b) the admixture is held at a temperature above about 215 degrees Celsius for a period of at least 15 minutes.

6. (Original) The method of claim 1 wherein in step (a) the initial ester solvent composition is constituted principally of ethylene carbonate, propylene carbonate, butylene carbonate, or combinations thereof.

7. (Original) The method of claim 1 wherein in step (a) the initial ester solvent composition is constituted principally of propylene carbonate.

8. (Original) A method for decomposing poly(ethylene terephthalate) face fibers from post-consumer carpet into components of a liquid ester solvent composition comprising: (a) admixing the poly(ethylene terephthalate) face fibers with an initial ester solvent composition containing principally ethylene carbonate, propylene carbonate, butylene carbonate, or mixtures thereof; (b) heating the admixture to a temperature above about 220 degrees Celsius for a period of at least about 5 minutes to form a second ester solvent composition; (c) separating the second ester solvent composition from

solid polyester and impurities by electrophoresis, sedimentation, flocculation, filtration, centrifugation, or combinations thereof; (d) cooling the second ester solvent composition to a temperature below about 30 degrees Celsius; and (e) separating the cooled second ester solvent composition from precipitated solids by electrophoresis, sedimentation, flocculation, filtration, centrifugation, or combinations thereof.

9. (Original) The method of claim 8 wherein in step (a) the solvent is propylene carbonate, ethylene carbonate, or mixtures thereof.

10. (Original) The method of claim 8 wherein in step (b) the admixture is heated to a temperature above about 230 degrees Celsius.

11. (Original) The method of claim 8 wherein in step (a) the poly (ethylene terephthalate) face fibers constitute between 2% and 50% by weight of the admixture.

12. (Original) A method for decomposing polyester into compounds having an appreciable solubility in cyclic esters at about 30 degrees Celsius and constituting a component of a liquid ester solvent composition comprising: (a) admixing polyester with ethylene carbonate, propylene carbonate, butylene carbonate, or mixtures thereof; (b) heating the admixture to a temperature

above about 220 degrees Celsius for a period of at least about 5 minutes to form an ester solvent composition; (c) separating the ester solvent composition from solid polyester and impurities by sedimentation, flocculation, filtration, centrifugation, or combinations thereof; (d) cooling the ester solvent composition to a temperature below about 50 degrees Celsius; and (e) separating the cooled ester solvent composition from precipitated solids by sedimentation, flocculation, filtration, centrifugation, or combinations thereof.

13. (Original) The method of claim 12 wherein in step (a) polyester is admixed with propylene carbonate.

14. (Original) The method of claim 12 wherein in step (b) the admixture is held at a temperature above about 220 degrees Celsius for a period of more than about 15 minutes.

15. (Original) The method of claim 12 wherein in step (d) the ester solvent composition is cooled to ambient temperature.

16. (Original) The method of claim 12 wherein in step (b) the admixture is heated to a temperature above about 230 degrees Celsius.

17. (Original) Chemical compositions employed as solvents containing at least (1) decomposition products of poly (ethylene terephthalate) polyester and (2) one or more cyclic esters.

18. (Original) Chemical compositions employed as solvents containing as one component compounds resulting from the thermal degradation of poly(ethylene terephthalate) dissolved in ethylene carbonate, propylene carbonate, butylene carbonate, or mixtures thereof.